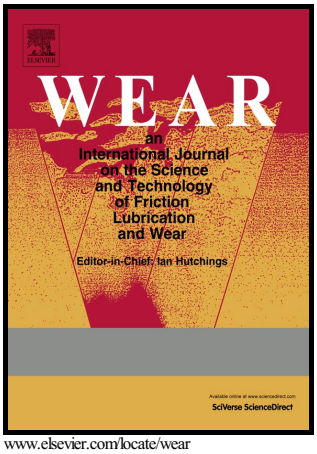

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Effect of wear from cleaning operations on sintered ceramic surfaces: correlation of surface properties data with touch perception and digital image processing

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ABSTRACT

In the professional kitchen environment, frequent and harsh cleaning processes are one of the main causes of surface wearing. This experimental study evaluates the effects of abrasive wear on different ceramic surfaces, aiming at selecting the most reliable and durable material in terms of performances and aesthetics.

Accelerated wear testing was applied on two ceramic finishes to simulate manual cleaning on commercial kitchen working tops.

Roughness changes on aged ceramic samples were analysed by quantitative and qualitative techniques. Surface properties were investigated using non-contact profilometry, and then correlated with digital image processing. Paired-comparison test was used to explore users' tactile responses to surface roughness modifications.

Results showed that the aging process had a limited but significant effect on the sintered ceramic roughness change. Quantitative and qualitative analysis revealed that abrasive aging affected the two finishes in a different way, probably due to their different chemical